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of the Field Columbian Museum, a large leaf of it, the sheet on which it is mounted bearing the following legend in Mr. Bebb's hand :

"In September, 1863, I made an excursion to the pine barrens of New Jersey and far down along the eastern shore of Maryland, my companion and very helpful guide to localities of special interest being my friend William M. Canby. Together we visited the grave of Dr. Darlington, and finding this shrub growing upon it, I took a single leaf as a memento." *

It seems as if it would be a worthy undertaking on the part of some of the botanists of eastern Pennsylvania to investigate this shrub, so interesting as to the problem of its derivation. It would certainly be well to explore its original habitat, or any other that may chance to have been recorded, with a view to determining whether it seems to have originated as a seedling from *R. glabra* or as a mere offset from another individual.

I find no record in either botany or horticulture of the shrub's having borne flower or fruit; but in the National Herbarium we have a specimen communicated long ago by Mr. Commons, of Delaware, which bears a panicle of immature fruit. This sample was taken from a cultivated specimen, but where it was grown is not indicated.

U. S. NATIONAL MUSEUM.

NEW FASCIATIONS

BY J. ARTHUR HARRIS

Perhaps the most common of all structural anomalies is that known as fasciation. Occurring in so many forms as it does, it is familiar to everyone and requires no description. In some species, as in the sweet potato and the coxcomb, it is to be observed with such frequency as to almost deserve the designation of a varietal characteristic.

The following cases of fasciation, most of which are not described in Penzig's admirable compendium of vegetable teratology,

* Herb. Field Mus., sheet 14074.

have come to my notice and are presented in the thought that they may have a statistical value.

The anomaly is very frequent in the inflorescence of *Ambrosia trifida* and *A. bidentata*, usually leading to a terminal division of the inflorescence.

In two specimens of *Centaurea Moschata*, pronounced fasciation of the stem was noticed, beginning near the base and extending to the tip. In one case the stem reached the breadth of about five-eighths inch. At the top was produced an inflorescence which was necessarily much convoluted, forming more than one complete turn and having a length of nearly five inches (taking the measurement at the contracted portion of the involucre, the narrowest portion of the head, and not from the tips of the expanded florets) as compared with a width of about a quarter of an inch, the thickness of the head being slightly over one-half inch. The second case was very similar in nature, but the phenomenon was not so marked. Penzig gives for *C. nigrescens*: "Eine Art Fasciation der Stängelspitze, mit drei verschmolzenen Inflorescenzen ist * * * erwähnt." De Candolle in his *Organographie Végétale*, figures a fasciated stalk of *C. Scabiosa* bearing at the tip two distinct and apparently normal inflorescences. The present inflorescences were apparently normal except for their greater diameter in one direction.

Slight fasciation of the stem was noticed in *Coreopsis tinctoria atropurpurea*.

In the herbarium of the Missouri Botanical Garden is a fine fasciated specimen of *Dioscorea divaricata* collected on the grounds in 1898 by Mr. J. B. S. Norton. Brongniart * records the fasciation of the whole climbing stem of this species. Penzig gives other examples of torsion and fasciation.

A head of *Helianthus* sp. sent from Florahome, Fla., by T. Tilden, Jr., shows a broad fasciation of the head and of the stem for some distance. Fasciation in *Helianthus* has several times been noted in the literature.

Several more or less extensively fasciated stalks of *Hibiscus Moscheutos* were noticed in a group of plants cultivated in the Missouri Botanical Garden and in Tower Grove Park.

* Bull. Soc. Bot. France 12: 49. 1865.

Fasciation of the stem in the Convolvulaceae has been several times noted in the literature. I have seen it in *Ipomoea pandurata* and in the sweet potato, where it may almost be regarded as a normal occurrence.

Conard * has published detailed observations on the phenomenon. He attributes the first published notice to Macfarlane, † apparently not being aware of the much earlier observation of Fermond, ‡ who describes a fasciation of one meter in length and ten to twelve centimeters in width.

Fine examples of fasciation were noticed in sprouts from the stump of a tree of *Melia Azedarach* ten or fifteen feet in height which had been winter-killed the preceding winter. Fasciation has already been described for this species.

It is hardly necessary again to record branching of the spike of *Plantago lanceolata*.

Dudley § states that the spike of *Plantago Rugelii* is frequently fasciated at the tip and Gerard || records more or less branched spikes. I have frequently noticed spikes which were fasciated or in which the fasciation had extended to apical branching.

Fasciation of the stem was noticed in a vigorous young plant of *Rhus typhina*. Penzig records fasciation in the twig of *R. glabra*.

The leaves of *Silphium trifoliatum* are described as in whorls of three or four. One bed of plants in the Missouri Botanical Garden showed leaves arranged largely in whorls of five, those of three and four being found much less frequently. Some of the stems were markedly fasciated toward the tip. One stalk of *Silphium integrifolium* with 3-whorled leaves was found at Mera-mec Highlands.

Fasciation in the stem is again noticed in *Spinacia oleracea*. Marked fasciation of the stem of *Stephanotis floribunda* was noted for me by Mr. G. E. McClure. Fasciation of the spike of *Ver-*

* Conard, H. S. Fasciation in the Sweet Potato. Contr. Bot. Lab. Univ. Penn., 2: 205-213. pl. 19. 1901.

† Macfarlane, J. M. Science II. 5: 940. 1897.

‡ Fermond, Ch. Essai de Phytomorphie, 1: 299, 301. Paris, 1864.

§ Dudley, W. R. The Cayuga Flora. Bull. Cornell Univ. 2: 64. 1886.

|| Gerard, W. R. Bull. Torrey Club 7: 67. 1880.

vena stricta with sometimes a division into two similar branches was not uncommon during August, 1902.

A fasciated specimen of *Vernonia angustifolia* is preserved in the Missouri Botanical Garden herbarium.

THE LIBRARY, MISSOURI BOTANICAL GARDEN.

NOTE ON BOTRYCHIUM VIRGINIANUM (L.) SW.

BY IVAR TIDESTROM

The species of *Botrychium* often present interesting modifications of their normal form; they seem to vary as to form between very wide limits and their variations appear to be independent of climatic or other conditions. This became obvious to me while out on a collecting trip along the western shore of Chesapeake Bay, some thirty miles east of Washington. Along with typical forms of *B. virginianum* grew the slender form described by Pursh under the name of *B. gracile* [Pursh, Fl. Am. Sept. 2: 656. 1814]. Some very large plants were also found, one of which is nearly 5 dm. high. Plants of this size are often found in the shaded ravines in the Potomac basin, which region appears to be a choice locality for this species. The most interesting form, however, was discovered among a number of normal plants at Chesapeake Beach, Md. It is represented in Fig. 1. Only one specimen was discovered; it proved interesting in having two fertile pinnules on the sterile segment — a case which is rarely met with in this species; the forking sporophyll and the two normal panicles are also interesting. Mr. Homer D. House informs me that the latter deviation from the normal form is not so rare.

As this species is very common in low woodlands, it is within easy reach of botanists and is well worthy of study. Some interesting data might be gathered and added to the history of this, our finest species of *Botrychium*.

Of other species, the following have been recorded as occurring within the limits of the Washington Flora: *B. neglectum* Wood, of which a single plant was discovered by Mrs. E. S.